

IN THE CLAIMS

Please rewrite the claims as follows:

Claims 1 - 7 (Cancelled).

8. (New). A film thickness measuring apparatus using a fast Fourier transformation comprising:

a light source for projecting a light on the surface of a thin film sample;

a spectrograph for splitting the light reflected from the sample according to the intensity of each wavelength;

an optical measuring device array for measuring intensities of each wavelength of the split reflected light;

a conversion unit for converting a signal of the measured intensities of each wavelength of the split reflected light into a digital signal data; and

a computation unit for computing a thickness of the thin film based on the number of oscillation obtained by a fast Fourier transformation in which the digital signal converted by the conversion unit adapts a refraction index dispersion (variation of the refraction index according to each wavelength of the reflected light).

9. (New) The apparatus according to Claim 8, wherein the computation unit is directed to compute the thickness of the thin film based on the following Equation:

$$d = \frac{619.9}{\Delta(n_f E)} = 619.9 \times f_{nE}$$

where  $n_f$  represents a refraction index of the thin film,  $d$  represents the thickness of the thin film,  $\Delta(n_f E)$  represents a period of reflection spectrum in the axis of photon energy multiplied by dispersive refraction index, and  $f_{nE}$  represents the number of oscillations of a reflection spectrum in the axis of photon energy multiplied by dispersive refraction index.

10 (New) A method for measurement of film thickness using a fast Fourier transformation comprising the steps of:

projecting a light on the surface of a thin film sample;  
splitting the light reflected from the sample according to the intensity of each wavelength;  
measuring intensities of each wavelength of the split reflected light;  
converting a signal of the measured intensities of each wavelength of the split reflected light into a digital signal data; and  
computing a thickness of the thin film based on the number of oscillation of reflection spectrum obtained by a fast Fourier transformation in which the digital signal data transformed by the transformation unit adapts a refraction index

dispersion (variation of the refraction index according to each wavelength of the reflection light).

11. (New) The method according to Claim 10, wherein in the step of computing the thickness of the thin film, the film thickness is computed based on the following equations:

$$d = \frac{619.9}{\Delta(n_f E)} = 619.9 \times f_{nE}$$

where  $n_f$  represents a refraction index of the thin film,  $d$  represents the thickness of the thin film,  $\Delta(n_f E)$  represents a period of reflection spectrum in the axis of photon energy multiplied by dispersive refraction index, and  $f_{nE}$  represents the number of oscillations of a reflection spectrum in the axis of photon energy multiplied by dispersive refraction index.